

## CLAIMS

We claim:

1. A method for analyzing a query and generating related results comprising:  
determining a keyword associated with the query;  
generating at least one term related to at least one keyword;  
supplying the keywords and terms to a data mining routine; and  
generating a least one related result to the query.
2. The method of claim 1, wherein the determining step comprises polling a database for terms related to at least one keyword.
3. The method of claim 1, wherein the query comprises a plurality of keywords and a plurality of generated terms.
4. The method of claim 3, further comprising:  
selecting at least one generated term; and  
supplying the keywords and the selected terms to the data mining routine.
5. A method comprising the steps of:  
constructing a query comprising keywords and constraints;  
generating related keyword and/or related constraints;  
supplying the keywords, the constraints, the related keywords and/or the related constraints to a data mining routine; and  
obtaining "as is" results and/or information, related results and/or information and a question related to the query adapted to enhance query results and/or information.
6. The method of claim 5, further comprising the steps of:

2 selecting the question; and  
3 obtaining "as is" results and/or information, related results and/or information and a  
4 sub-question related to the question adapted to enhance query results and/or information.

1 7. The method of claim 5, further comprising the steps of:

2 selecting the question;  
3 obtaining "as is" results and/or information, related results and/or information and a  
4 sub-question related to the question adapted to enhance query results and/or information;  
5 selecting the sub-question;  
6 obtaining "as is" results and/or information, related results and/or information and a  
7 sub-question related to the question adapted to enhance query results and/or information to  
8 form a query-by-question path.

1 8. The method of claim 7, further comprising the step of:

2 repeating the selecting sub-question step and obtaining step.

1 9. The method of claim 5, wherein the constraints are selected from the group consisting  
2 of containment constraints, grouping constraints, connector constraints, data constraints and  
3 mixtures and combinations thereof.

1 10. A method comprising:

2 constructing a query;  
3 extracting keywords and constraints from the query;  
4 generating related keywords and/or related constraints;  
5 supplying the keywords, the constraints, the related keywords and/or the related  
6 constraints to a data mining routine; and  
7 obtaining "as is" results and/or information, related results and/or information and a  
8 question related to the query adapted to enhance query results and/or information.

1 11. The method of claim 10, further comprising the steps of:  
2 selecting the question; and  
3 obtaining "as is" results and/or information, related results and/or information and a  
4 sub-question related to the question adapted to enhance query results and/or information.

1 12. The method of claim 10, further comprising the steps of:  
2 selecting the question;  
3 obtaining "as is" results and/or information, related results and/or information and a  
4 sub-question related to the question adapted to enhance query results and/or information;  
5 selecting the sub-question;  
6 obtaining "as is" results and/or information, related results and/or information and a  
7 sub-question related to the question adapted to enhance query results and/or information to  
8 form a query-by-question path.

1 13. The method of claim 12, further comprising the step of:  
2 repeating the selecting sub-question step and obtaining step.

1 14. The method of claim 10, wherein the constraints are selected from the group  
2 consisting of containment constraints, grouping constraints, connector constraints, data  
3 constraints and mixtures and combinations thereof.

1 15. A system comprising:  
2 a remote digital processing unit including an operating system, communication  
3 routines, and a user interface having a query construction routine and a results display  
4 routine;  
5 an application server including an operating system, communication routines, and a  
6 query information retrieval content enhancing sub-system having a controller, a library of

7 database interfaces, a library of data mining routines, a user profiler, a DB middleware  
8 component and a query/results database, where the subsystem generates related results and/or  
9 information and questions related to the query to enhance information retrieval from a query  
10 constructed at the remote digital processing unit;

11 a database server including an operating system, communication routines, a database  
12 and database services; and

13 a network interconnecting the remote digital processing unit, the application server  
14 and the database server.

1 16. The system of claim 15, wherein the data mining library includes a chi squared DMR,  
2 a correlation DMR, a decision tree DMR, a market basket type DMR, a naive Bayes DMR  
3 based on Bayesain statistics, an association DMR, a cluster DMR, or mixtures or  
4 combinations thereof.

1 17. The system of claim 15, wherein the database is selected from the group of  
2 multidimensional databases, relational database, hierarchical databases and mixtures and  
3 combinations thereof.

1 18. A query information retrieval content enhancing system comprising:

2 a controller,

3 a library of database interfaces,

4 a library of data mining routines,

5 a user profiler,

6 a middleware interface and

7 a query/results database,

8 where the system generates "as is" results and/or information, related results and/or  
9 information and questions related to a query to enhance information retrieval from the query.

19. The system of claim 18, wherein the DMR is a chi squared DMR, a correlation DMR, a decision tree DMR, a market basket type DMR, a naive Bayes DMR based on Bayesian statistics, an association DMR, a cluster DMR and mixtures and combinations thereof.

20. The system of claim 18, wherein the middleware interface is selected from the group of multidimensional database middleware interface, relational database middleware interface, hierarchical database middleware interface and mixtures and combinations thereof.

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